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ABSTRACT

Using the metaphoric story device of two tribes, one that builds their culture around words and the other which depends primarily on visual perception, this paper suggests a distinctive mental paradigm at work within the society of artists, who pursue visual literacy through graphic ideation. The author discusses his education in art and his discovery of "memes," the smallest recognizable pieces of information, and notes that holistic memes have given him a perception of the ethical values and biases of the tribe of the vision. Discussion then moves to the differences between the thinking of visual artists and those without artistic inclinations, as identified by neuropsychologists and psychologists. Artists, who are more aware of the abstract structures underlying visual perception, are better able to control and manipulate the viso-spatial abstract structure of their visions for communicative and creative purposes. Visual artists of acknowledged creativity have also been found to demonstrate much greater use of allusive--or loose categorical--thinking than non-artists. Research has suggested that the superimposition of separate entities and phenomena in the same space within the human brain is the triggering mechanism for creative thought, or homospatial thinking. Psychomorphology holds that the mind (psycho) and the world of visual forms (morphology) are intimately and integrally entwined. As illustrated in the author's abstract layered-form and shaped canvas paintings, flexibility and fluency are necessary to effectively develop effective visual stimuli; this design fluency has been identified with the right hemisphere of the brain. Visual literacy requires a deepening of visual understanding achieved through visual experience in addition to the word based study of human perception. (Contains 19 references.) (AEF)

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Editors' Choice

A Personal Vision Quest: Learning To Think Like An Artist

by Dennis M. Dake

Abstract

This paper describes thirty years of visual exploration by the author, a professional artist. Using the metaphoric story device of two tribes, one that builds their culture around words and the other which depends primarily on visual perception, the paper suggests a distinctive mental paradigm at work within the society of artists, who pursue visual literacy through the experience of graphic ideation. The author's individual story of visual development and understanding is supported throughout the paper with the findings of numerous studies in psychology and neuropsychology which show a growing scientific awareness of the distinctive visual thinking style of artists.

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"Each hemisphere (of the human brain) has its own private sensations, perceptions, thoughts, and ideas all of which are cut off from the corresponding experiences in the opposite hemisphere. Each left and right hemisphere has its own private chain of memories and learning experiences that are inaccessible to recall by the other hemisphere. In many respects each disconnected hemisphere appears to have a separate 'mind' of its own." Roger Sperry, Nobel Laureate (Sperry, 1976)

A Metaphor: The Two Tribes

There are two tribes in this world. The dominant tribe, the tribe of the word, lives in a valley separated from the "other" tribe by a great mountain range. Little is known about the second tribe, the tribe of the vision, which lives in the valley on the opposite side of the mountains.

There are rumors that the tribe of the vision is quite different from our kind. Rumors have it that they worship different, heathen gods and practice strange irrational rituals. The tribe of the word, as you know, has developed a culture of sophistication and critical thought. Through the use of discursive symbolism, parsing all thought into numerical and written symbols, our ancestors have given us great precise control over knowledge concerning the structure and functioning of the surrounding universe. With our young, we begin in the earliest years of life to stress the standardization of outcomes from our educational factories. As our young are initiated into the knowledge of the word, they gain in stature until some few are granted the level of expertise that allows them to become executive controllers of the hierarchical structure. Accountability is prized at all levels of our culture and the more quantitatively anything can be assessed the richer the reward. Our culture has a special mandate from the omnipotent creator of all, for in the beginning was the word.

This paper is report from the tribe of the vision, a message from the other side of the mountain. In this tribe dwell the humans who call themselves, artists.

Figure 1
Self Portrait

Portrait Of The Artist As A Certifiable Schizophrenic, 1980, Watercolor, 23 X 29" (copyright Dennis M. Dake)

As a representative of this tribe of the vision, let me tell you that we are very suspicious of the intentions of the tribe of the word. Our leading priests have warned us repeatedly of the danger of dominance by words. Many in our tribe distrust words and the misunderstand-

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ings they can lead to. We all use words and think we know what they mean but our ancient stories tell us that for many people the same words have different meanings. A potential for verbal misunderstanding leads to many problems for our tribe, which must have a clear and creative vision in order to survive. For example, our legendary leader, Leonardo DaVinci once wrote, "The supreme misfortune is when theory outstrips performance." For the tribe of the vision performance must come first. In modern times, the warnings against over reliance on words have grown increasingly strident. Cezanne the father of our current social order said, "Talking about art is almost useless." While we have often received emissaries from the tribe of the word, who talk endlessly about our culture, we often wonder, "do they really understand how we think". Our tribe understands the precision and control of thought possible with discursive symbolism, but we believe that presentational symbolism is a superior way to understand the world.

Our quest, in the tribe of the vision, is to construct visual images which are the closest fitting equivalent of the individual's underlying experience. This poetic vision of the world, we know, can resonate on multiple levels of meaning simultaneously, representing so much more, holistically, than words can ever hope to convey. In our dealings with the tribe of the word, we find them unfailingly serious in their obsession with converting everything into abstract symbols. Don't they appreciate the playful experimentation that leads to creativity and beauty? Our knowledge is known to us through intuition and aesthetic sensitivity without resorting to words. Why don't the people on the other side of the mountain see what we mean?

"In the artistic process, which involves a novel arrangement of familiar elements to form an affective message, the right hemisphere may provide the neural substrate for fresh perspectives or insight, simply because of its different mental modus operandi." A. Schweiger, Neuropsychologist (Benson & Zaidel, Eds. 1993)

The Education Of A Visual Artist

My life as a visual artist has been lived as an interested explorer wandering between the tribe of the word and the tribe of the vision. (Figure 1) While visual artists usually prefer to remain on their side of the mountain, my fate has been to try to learn from both groups and explore what they have to offer to each other.

My earliest education did not include a grounding in the visual discipline of an artist. There were no art teachers to teach in my school system, no artists lived in my small town, and no one attended art galleries or museums. The tribe of the word seemed the total focus of the educational system and the culture. Therefore, during college art training, I found myself without a developed understanding of the thinking styles and disciplined visual dialog processes characteristic of artists. There was always a struggle to find visual ideas for class assignments.

The Importance of Memes

During the early 1960's, the midwest was being fully exposed to the influence of abstract expressionism, which had flourished in New York ten to twenty years earlier. Abstract Expressionist role models, for me, from the tribe of the vision were the artists Franz Kline and Wilem DeKooning. I greatly admired their free

Figure 2
Abstract Expressionist Painting
Untitled, Acrylic, 21 X 23", 1967
(copyright Dennis M. Dake)

and expressive use of brush work with paint. The art works of Kline and DeKooning, viewed in books and magazines, continued to guide my thoughts and approaches to art well into my graduate school years. (Figure 2)

Eventually, however, the heavily introspective and idiosyncratically methods and ideology of abstract expressionism, which had intrigued and captivated me for many years, became a dead-end path for continued visual development. I found myself continually copying the solutions from my previous work. Purely subjectively based exploration, I came to see, was primarily of individual interest and was not critically attached to the long-term, transpersonal discipline of art.

While searching for new vision guides on my artistic quest, I discovered the artist Larry Rivers who became increasingly important to me. Rivers represented a bridge from the abstract expressionist immediacy of gesture and expression to the more traditional disciplined exploration with representational draftsmanship and subject matter. (Figure 3) Rivers spoke to me, in the manner of a true spirit guide, of the initiation rites in disciplined artistic thinking necessary for membership in the artistic tribe of the vision.

Figure 3
Painting Inspired By Art Of Larry Rivers
Patriot At The Parade, Acrylic, 50 X 60", 1968
(copyright Dennis M. Dake)

The importance for young artists of artistic role models as vision guides was given clarity, when during the last year, I discovered, in the tribe of the word, the ideas of R. Dawkins. Dawkins postulates the existence of memes, the smallest recognizable pieces of cultural information. Memes are defined as closely analogous in cultural evolution to the role that genes play in biological evolution. The transmission of memes is said to account for the evolutionary continuity and on-going development of cultural information. Encounters with influential memes which have informed the develop-

Figure 4
Work Inspired By Art of Franz Kline
The Poor People Next Door, Mixed Media, 18 X 24", 1969. (copyright Dennis M. Dake)

ment of my art work have included those found in the work of Rivers, Kline, DeKooning, Cezanne, Matta, and others. (Figure 4) I have come to see that much visual and structural knowledge has been transmitted to me through holistic meme units.

Holistic memes have given me a perception of the ethical values and biases of the tribe of the vision. These values have centered on the primacy of visual understanding and communication over and above verbal symbolization and expression. As an older ancestor of the tribe, Paul Cezanne, expressed it, "Talking about art is almost useless." Without consciously knowing it, this preference for visual communication, in opposition to communica-

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tion in words and numbers, was the first of many clues to understanding the tribe of visual artists.

Laterality and Dominance in the Brain

In the years since my formal art education was completed, I have discovered several further explanations for the ingrained preference of the tribe of the vision for visual thought and communication over verbal discourse. The literature with the most important explanatory power for me has centered around the overriding executive control and dominance of the parsing, linear thought processes of the left hemisphere of the human brain. This dominance has been shown by neuropsychologists to have an extremely inhibitory effect on the visual based, holistic thought structures of the visio-spatial processing right hemisphere.

This inhibition of one hemisphere of the brain against the functions of the other hemisphere, makes, as artists have known for hundreds of years, expanded growth of visual dialog and thought difficult. For example, a chance comment from a painting teacher in the late 1960's, that the shaped canvases that I was working on were, "more sculpture than painting," (Figure 5) effectively convinced me to end that visual line of inquiry. The inhibitory effect of this simple verbal comment was so powerful that it has only been in the past two years, nearly 30 years later, that I have again felt visually compelled to return to a deep and compelling visual logic that shaped canvases once held for me. (Figure 6) Words can create a formidable barrier to visual thought. A preference for relying on the visual over the verbal is a major boundary between the territories of the two tribes of the world.

Figure 5
Shaped Canvas - 1969
Untitled, Acrylic & Sand, 45 w x 62" h, irregular shape
(copyright Dennis M. Dake)

Neuropsychology Of Artistic Thinking

As my teaching career has moved from the high school to the university level, there has been a greater need to continually move back and forth between the separate worlds of the two tribes. Both because I have worked in the area of art education, which requires clear and logical explanations for artistic phenomena, and because of youthful over immersion in the tribe of the word, I have experienced an increased need to search out plausible explanations to explain my continuing lack of visual understanding. This exploration has led me to some interesting scientific explorations in psychology and neuropsychology, from the other side of the mountain.

Figure 6
Shaped Canvas - 1996
Untitled, Acrylic on Canvas, 43 x 71", irregular shape
(copyright Dennis M. Dake)

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Figure 7
Cloth Model for Tie and Die Series
original photography,
(copyright Dennis M. Dake)

Figure 8
Painting From Cloth Model
Thought Experiment # 6, Acrylic, 36 x 48", 1976
(copyright Dennis M. Dake)

Abstract Basis Of Visual Thought

An abstract basis for vision has been studied for many years by the scientific community but only in recent years have studies demonstrated that artist's perceptions depend upon physiological processes that pull in abstract structures. Neuropsychologists studying the scanpaths of saccadic eye movements in artists and non-artists (Zangmeister, Sherman, and Stark, 1995) found that professional artists and sophisticated viewers of art had significantly different patterns than individuals in control groups from scientific fields. A demonstrated higher ratio of global scanpaths (for large abstract structures) to smaller saccadic scans for details provides the artist and trained observer with more awareness of the abstract structures underlying visual perception. Artists are then better able to control and manipulate the visiospatial abstract structure of their visions for communicative and creative purposes.

My own studio research, indicates that progress in developing all types of visual ideas requires a disciplined and conscious focus on the abstract properties underlying outward illusions of form. In a series of airbrushed watercolor paintings which I titled, "Tie and Die," I explored abstract forms that seemed intuitively to be the visual equivalents of my own mental processes. These paintings were developed from 3-dimensional models of twisted and bundled cloth. (Figure 7 & 8) As I reported in an earlier paper, presented to the International Visual Literacy Association (Dake, 1993), I was startled after finishing this series when a respected scientific observer suggested that these paintings were a cognitive exploration of the asymmetrical, mathematical functions of fractals. Could this series of personally derived visual forms represent cognition without discursive symbolization? (Figures 9 & 10)

Allusive Thinking And Art

Psychologists have identified additional differences between the thinking of visual artists and those without artistic inclinations and/or training. Experiments to identify and categorize the nature of this artistic thinking show that visual artists of acknowledged creativity demonstrate much greater use of allusive thinking than non-artists. (Tucker, Rothwell, Armstrong, and McConaghy, 1982) Allusive thinking is defined as loose categorical thinking based on broader attentional processes than critical, verbally based thought. In an age that encourages non-representational as well as representational art forms, this ability for allusive thinking patterns may even confer a competitive advantage on certain visual artists. "At present, when non-representational visual art is more valued, allusive thinking artists would appear likely to be more successful, in view of their ability to produce work rich in allusions operating at a less conscious level and hence less immediately obvious to the viewer." (Tucker, et. al, 1982)

Figure 9
Tie and Die Painting Experiment

Thought Structure # 8, Watercolor, 23 x 29", 1979
(copyright Dennis M. Dake)

Visual Cognition

The ability of humans to think by visual means alone has been explored within science and written about in the cognitive literature from the tribe of the word. For example, in the book "A Second Way of Knowing: The Riddle of Visual Perception", Edmund Bolles reexamines the "Top Down" gestalt basis of visual perception and contrasts its strengths with the limitations of the mechanistic "Bottom Up" approach of much current perceptual psychology. Bolles postulates that both approaches can lead to new knowledge, although the latter usually does not recognize the former as representative of intelligent thought.

A specific example documenting visual cognition was published in the neuropsychology journal, Brain, (Zeki and Lamb, 1994). In their article, The Neurology of Kinetic Art, these two scientists argue that over a 40 + year period of time artists developed kinetic art forms which foreshadowed later neurological explorations of the functions of the primary visual cortex of the brain. Specifically Zeki and Lamb contend that kinetic artists "unknowingly" isolated and explored the functions of the V5 area of the primary visual cortex which processes motion to the exclusion of color, shape, or other aspects of visual experience. Converging lines of exploration and reasoning such as this give hope that the tribe of the word will eventually understand and accept the nature of visual cognition.

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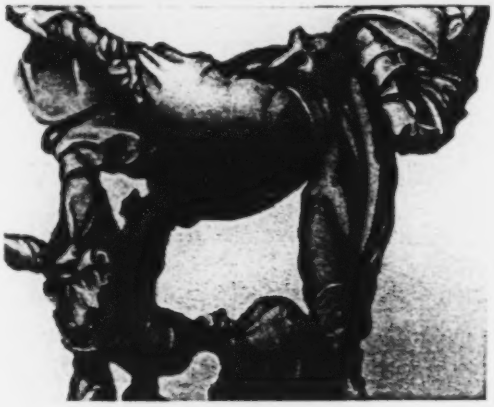
Figure 10
Tie and Die Painting Experiment

Thought Structure # 9, Watercolor, 29 x 23", 1980
(copyright Dennis M. Dake)



Psychomorphology

Within the tribe of the vision, I have discovered that all configuration sources are legitimate and equally full of potential. The logic we, of the tribe, respect is purely intuitive and visual. Using these mental processes, over the past 10 years, the range of my visual experiments has broadened to include a larger variety of invented and discovered forms. The sources of these new design ideas have come from both nature and man made forms. My visual ideation to discover evocative visual images begins with the archival photographic documentation of interesting forms from nature and random mechanical configurations, found in such places as automobile junkyards. At the beginning of this series of paintings, I layered several photographic images on top of each other, using visual interest as the sole criteria for selection. (Figures 11 & 12)

Homospatial Thinking

After completing this series of paintings, I discovered that research by scientists interested in the creative functions of the human mind has suggested that the superimposition of separate entities and phenomena in the same space within the human brain is the triggering mecha-

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nism for creative thought. This type of thinking has been called homospatial thinking. (Rothenberg 1986) Homospatial thinking is a form of visual epistemology well respected in the tribe of the vision although it may seem random and chaotic to humans on the other side of the mountain. The order and pattern of this type of thinking lies below the level of superficial appearances. Homospatial thinking acknowledges that the viewer of any visual form makes an important contribution to the meaning of his/her perceptions. Objective sensations of visual phenomena are always filtered through a mental filter consisting of the viewer's expectations and past experiences. Each viewer then puts together their perceptions as unique and individual constructions.

The visual art forms which I have developed over the past 10 years are designed as rigorous experiments to explore this visual mind - form interaction. I have on other occasions (Dake, 1995) called this original discipline, psychomorphology. Psychomorphology holds that the mind (psycho) and the world of visual forms (morphology) are intimately and integrally intertwined.

Design Fluency & Low Spatial Frequency

Over the past 3 years, my visual research has shifted to a series of shaped canvases that break the mold of rectangles, a painting format used almost exclusively by painters since the Renaissance. Inspired by rocks from the coast of Maine and the crumpled scraps of metal from destroyed automobiles, I have created a series of shaped wood and canvas forms which I think of as analogous to stimuli used in a scientific experiment. These forms are developed by continual, flexible, and extended manipulation of sections of ambiguous, out-of-focus photographs to visually discover a spirit of equivalency with my life experiences. (Figure 13)

Flexibility and fluency are necessary to effectively develop such effective visual stimuli. This design fluency has been identified with the right hemisphere of the brain. Two neuroscientists (Jones-Gotman and Milner, 1977) have through the study of brain damaged individuals, identified the right frontal and right frontocentral areas of brain as most implicated in design fluency in a non-verbal mode. Other scientists have found that to engage the right hemisphere it is important to draw upon the demon-

Figure 11
Layered Photographic Negatives As Visual Inspiration For Painting
(copyright Dennis M. Dake)

Figure 12
Psychomorphology Experiment
Artist's Perspective, Acrylic, 40 x 60", 1989
(copyright Dennis M. Dake)

Figure 13
Psychomorphology Experiment
Out of the Blue, Acrylic, 28 x 36", 1989
(copyright Dennis M. Dake)

strated task sensitivity of the right hemisphere to "fuzzy" visual stimuli of low spatial frequency (Semmes, 1968). Diffuse representation of information in the right hemisphere contributes to an ability in creative individuals to integrate dissimilar units into new and previously unseen inventions. Leaders of the tribe of the vision have attested to the inventive power of low frequency, right hemispheric processes. Leonardo DaVinci said it most eloquently:

"When you look at a wall spotted with stains, or with a mixture of stones, if you have to devise some scene, you may discover a resemblance to various landscapes, beautified with mountains, rivers, rocks, trees, plains, wide valleys, and hills in varied arrangement; or again you may see battles and figures in action; or strange faces and costumes, and an endless variety of objects, which you could reduce to complete and well drawn forms. And these appear on such walls confusedly, like the sound of bells in whose jangle you may find any name or word you choose to imagine." (Mac Curdy, 1938)

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Reconstrual and Bisociation

The logic of the tribe of the word relies on the integration of similar units of information. The logic of the tribe of the vision prefers the fertile interactions of dissimilar units. The bisociation, cross fertilization within a single human brain, of previously separated "dissimilar" information sources into new combinations is the primary mental process in human creativity. (Koestler, 1977)

At a subconscious level all incoming visio-spatial messages are continually correlated, in a rapid fire process of comparison, with other similar structural units from past experiences. This process has been titled, "reconstrual" by psychologists (Peterson, 1993) studying the processes of creativity and discovery. Individuals who have been initiated into the tribe of the vision have a developed sensitivity to the process of reconstrual. Members of the tribe of the vision are able to tap into isomorphic forms of analogical thinking which occur early in visual processing in the right hemisphere of the

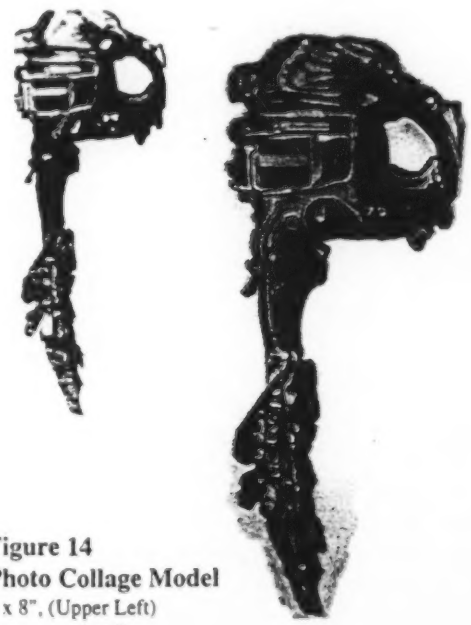

Figure 14
Photo Collage Model
6 x 8", (Upper Left)
And
Psychomorphology Experiment
Untitled, Acrylic, 71"h x 29"w, irregular shape
1995, (Right), (copyright Dennis M. Dake)

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Figure 15 Psychomorphology Experiment
Untitled, Acrylic, 48"h x 32"w, irregular shape, 1996
(copyright Dennis M. Dake)

brain. The richness of the multiple associations obtained in this way lend a richness of contextual meanings to everything seen and created.

Because perception is so variable, I have begun to experiment with abandoning the rectangular, Renaissance "window on the world" that implies a stable, single one-eyed observer with a set point of view. (Figure 14) My intention, as best I can state it to you in discursive form, is, not to convey any predetermined message but to rather provoke the mind of the viewer to original invention and creation. (Figure 15) Psychomorphology is backed up by research from the both tribes of the world.

The Vision Quest Goes On

My personal and professional, artistic vision quest goes on. My goal, is an undefinable sense of beauty and order that, in the end, I can not explain in words. I am challenged by the creation of visual stimuli that can arouse in the viewer an abstract, allusive, and poetic perception of the world. This ability, which is popularly called imagination, requires taking full responsibility for one's visions and the manner in which they are communicated. As my research develops, I hope to deepen my understanding of this process of visual cognition, the universal birthright of every human.

The two tribes of this world should be equally home to all human beings. We are all on a vision quest whether or not we have ever been formally educated to "see" the true nature of our abilities. As with the traditional verbal literacy skills of the tribe of the word, visual literacy involves not only passive reading skills but the active acquisition of knowledge and understanding through the practice of ideation skills. Visual Literacy requires a deepening of visual understanding achieved through visual experience in addition to the word based study of human perception.

References

Arnheim R. (1969) Visual Thinking, Berkeley, CA, University of California Press

Bolles, E.B. (1991) A Second Way of Knowing: The Riddle of Human Perception, New York, Prentice Hall Press

Changeux, J.P. (1994) Art and Neuroscience, Leonardo, Vol. 27, No 3, pp 189-201

Corballis, M. (1991) The Lopsided Ape: Evolution of the Generative Mind. New York, Oxford University Press

Dake, D. (1993) Visual Links: Discovery in Art and Science, in: Art, Science, & Visual Literacy, Braden R., Baca J., & Beauchamp D. Eds., Blacksburg, VA, International Visual Literacy Assoc., pp 11-21

Dake, D. (1995) Process Issues in Visual Literacy, in: Imagery and Visual Literacy, Beauchamp, D., Braden R., and Griffin R. Eds., Blacksburg, VA, International Visual Literacy Assoc., pp 1-23

Jones-Gotman, M. and Milner, B. (1977) Design Fluency: The Invention of Nonsense Drawings after Focal Cortical Lesions, Neuropsychologia, Vol. 15, pp 653 - 674

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Editors' Choice

Koestler, A. (1978) The Act of Creation, London, Pan Books, Ltd.

Mac Curdy E. ed. (1938) Notebooks of Leonardo Da Vinci, Vol 2., Reynal and Hitchcock, New York, p. 254

Peterson M.A. (1993) The Ambiguity of Mental Images: Insights Regarding the Structure of Shape Memory and its Function in Creativity, in Imagery, Creativity, and Discovery: A Cognitive Perspective, Amsterdam, Roskos-Ewoldsen B., Itons-Peterson M.J., Anderson R. eds., The Netherlands, North-Holland

Rothenberg, A. (1986) Artistic Creation as Stimulated by Superimposed Versus Combined-Composite Visual Images, Journal of Personality and Social Psychology, Vol. 50, No. 2, pp 370 - 381

Semmes, J. (1968) Hemispheric Specialization: A Possible Clue to Mechanism, Neuropsychologia, Vol. 6, pp 11 - 26

Smolucha L. and Smolucha F. (1985) A Fifth Piagetian Stage: The Collaboration Between Analogical and Logical Thinking in Artistic Creativity., Visual Arts Research, pp 91-99

Schweiger A. (1993) Quoted in: The Dual Brain, Hemispheric Specialization in Humans, Benson D. and Zaidel E. Eds., New York, The Guildford Press

Sperry, R.W. (1976) Lateral Specialization in the Surgically Separated Hemispheres. In: The Neurosciences: Third Study Program, F.O. Schmitt and F.G. Worden, Eds., Cambridge, Mass., MIT Press, pp 5-19

Springer S., Deutsch G. (1993) Left Brain, Right Brain, New York, W.H. Freeman and Company

Tucker P., Rothwell S., Armstrong M., and McConaghy N. (1982) Creativity, divergent, and allusive thinking in students and visual artists. Psychological Medicine, Vol 12, pp 835-841

Zangmeister, W.H. and Sherman K., and Stark L. (1995) Evidence for a Global Scanpath Strategy in Viewing Abstract Compared with Realistic Images, Neuropsychologia, Vol. 33, No. 8, pp 1009 - 1025

Zeki S. and Lamb M. (1994) The Neurology of Kinetic Art, Brain, Vol 117, pp 607 - 636